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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,664	07/14/2006	Sai Shankar Nandagopalan	PHUS030247	2487
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EXAMINER OBAYANJU, OMONIYI				
ART UNIT 2617		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/565,664

**Applicant(s)**

NANDAGOPALAN, SAI SHANKAR

**Examiner**

OMONIYI A. OBAYANJU

**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB06)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 01/23/2008

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 08/24/2009 have been fully considered but they are not persuasive.

In regards to the independent claims 1 and 11, applicant argues that the prior art reference Cimini (USPN 20030133427), failed to teach at least in part ***"determining an allocated transmission time for each of the wireless stations based on a set physical transmission rate, wherein each of the wireless stations has individually allocated transmission time based on the need of each of the wireless stations."*** In respect to the prior art reference, Cimini, applicant further stated that "although Fig. 5 shows two different transmission times for nodes 1 and 2, having different times does not implies that they are determined individually".

In response, examiner respectfully disagrees with applicant's argument. First, as mentioned and/or stated by applicant, fig. 5 of the prior art showed and/or illustrated two individual (different) transmission times for each or separate nodes (1 and 2). Therefore, the claim does not uniquely and particularly define the term ***"determining an allocated transmission time for each of the wireless stations"*** and/or ***"wherein each of the wireless stations has individually allocated transmission time"*** so as to distinguish from the applied prior art. During patent examination, the claims must be

given their broadest reasonable interpretation. See also MPEP §2111. The term **"determining an allocated transmission time for each of the wireless stations"** and/or **"wherein each of the wireless stations has individually allocated transmission time"** is broadly claimed, therefore, broadly interpreted. Broadly interpreted, **"determining an allocated transmission time for each of the wireless stations"** and/or **"wherein each of the wireless stations has individually allocated transmission time"** is fairly characterized as individual (different) transmission times for each or separate nodes (1 and 2) (fig. 5).

Secondly, examiner respectfully disagrees with applicant's argument that the prior art references fails to disclose at least in part that the transmission time for each of the wireless stations is based on a set physical transmission rate, and that the individually allocated transmission time is based on the need of each of the wireless stations. As discussed above, Fig. 5 illustrates individual (different) transmission time for each separate node. Furthermore, in **pg.3, Paragraph [0037], lines 3-9 and Fig. 5**, Cimini teaches determining an allocated transmission time for each of the wireless stations based on (inversely proportional to) a set physical transmission rate. Finally, in **pg. 1, Paragraph [0005] and [0003], and Fig. 5**, Cimini teaches wherein each of the wireless stations has individually allocated transmission time based on the need (requirement of mixed rate nodes) of each of the wireless stations.

In conclusion, the claim does not uniquely and particularly define the term **"based on"** as presented in the claims so as to distinguish from the applied prior art. During patent examination, the claims must be given their broadest reasonable

interpretation. See also MPEP §2111. The term **"based on"** as presented in the claims is broadly claimed, therefore, broadly interpreted. The broadly interpreted term **"based on"** is fairly characterized as requirement and/or relationship (inversely proportional) between transmission time and transmission rate of wireless terminals.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11, and 14-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Cimini, JR. et al. (US Publication No. 20030133427).

As to **claim 1**, Cimini teaches a method of providing bandwidth fairness in a wireless network that includes a plurality of wireless stations (abs, and pg. 4, pp0049, lines 7-8), the method comprising: determining bandwidth requirement (abs, and pg. 3, pp0036, lines 1-8) for a particular service interval (pg. 1, pp0005 lines 13-16) for each of the wireless stations (fig. 1b, #12a,b,c); determining an individually (different, fig. 5) allocated transmission time for each of the wireless stations based on each of the wireless station's transmission requirements (pg. 3, pp0036) at a set physical

transmission rate (pg. 3, pp0034 lines 14-16, and pp0037, lines 1-9); and fragmenting a packet by at least one of the wireless stations if the at least one wireless station transmits at a transmission rate that is lower than the set physical transmission rate (pg. 5, pp0060, lines 1-4 and pp0048, lines 13-15).

**As to claim 2**, Cimini teaches wherein the allocated time for each of the plurality of wireless stations is the proportional to the quantity of data to be sent by the respective stations (abs) during a service interval (pg. 1, pp0005 lines 13-16).

**As to claim 3**, Cimini teaches wherein for each of the at least one wireless station a number of the fragments is equal to the set physical transmission rate divided by the lower transmission rate (pg. 4, pp0042 lines 7-11).

**As to claim 4**, Cimini teaches wherein the allocated transmission time is equal to the total data of all packets generated in the beacon interval divided by the set physical transmission rate (pg. 4, pp0049).

**As to claim 5**, Cimini teaches wherein the wireless network is a multiple physical transmission rate wireless network (pg. 2, pp0030, lines 5-10).

**As to claim 6**, Cimini teaches wherein the wireless network is a Generalized Packet Radio Service (GPRS) network (pg. 1, pp0003, lines 11-12, Transmitting data at different transmitting rate is equivalent to (GPRS) network).

**As to claim 7**, Cimini teaches wherein the wireless network is a Wireless Local Area Network (WLAN) (pg.1, pp0003, line 1).

**As to claim 8**, Cimini teaches wherein each of the at least one wireless stations transmits all remaining fragments after all wireless stations that transmit at the set

physical transmission rate have completed transmitting their packets (pg. 5, pp0062, lines 1-5).

As to **claim 9**, Cimini teaches further comprising maintaining a particular quality of service QoS for each of the wireless stations that maintain transmission at the set physical transmission rate during a service interval (pg. 3, pp0037 lines 8-15).

As to **claim 10**, Cimini teaches wherein each of the at least one wireless stations transmits all remaining fragments (fragments equivalent to packet) until its physical transmission rate is greater than the set physical transmission rate (pg.5, pp0057, lines 1-7).

As to **claim 11**, Cimini teaches a wireless network, comprising: at least one access point (fig. 1b, #12d); and a plurality of wireless stations (fig. 1b, #12a, b, c), wherein in each service interval (pg. 1, pp0005 lines 13-16), the access point (fig. 1b, #12d) individually (different, fig. 5) allocates a transmission time for each of the wireless stations based on each of the wireless station's transmission requirements at a set physical transmission rate (pg. 3, pp0034 lines 14-16, and pp0037, lines 1-9) that is fixed for the service interval and wherein the plurality of wireless stations transmit at the set physical transmission rate (pg. 3, pp0038, lines 1-6); and wherein if any of the plurality of wireless stations change their transmission rate to a lower transmission rate than the set physical transmission rate during the service interval (pg. 1, pp0005, lines 13-16), each of the wireless stations that change their transmission rate fragment their respective packets into two or more fragments of equal length (pg. 1, pp0005, lines 16-19)

As to **claim 14**, Cimini teaches wherein the number of fragments is equal to the lower transmission rate divided by the set transmission rate (pg. 4, pp0042 lines 7-11).

As to **claim 15**, Cimini teaches wherein the transmission time is equal to the total data of all packets generated in the beacon interval divided by the set physical transmission rate (pg. 4, pp0049).

As to **claim 16**, Cimini teaches wherein each of the plurality of wireless stations is adapted to transmit at multiple physical transmission rates (pg. 2, pp0030, lines 5-10).

As to **claim 17**, Cimini teaches wherein the wireless network is a Generalized Packet Radio Service (GPRS) network (pg. 1, pp0003, lines 11-12, Transmitting data at different transmitting rate is equivalent to (GPRS) network).

As to **claim 18**, Cimini teaches where the wireless network is a Wireless Local Area Network (WLAN) (pg.1, pp0003, line 1).

As to **claim 19**, Cimini teaches wherein a particular quality of service (QoS) is maintained for each of the plurality of wireless stations that transmit at the set physical transmission rate for the entire service interval (pg. 3, pp0037 lines 8-15).

As to **claim 20**, Cimini teaches wherein each of the wireless stations that change their transmission rate to a lower transmission rate than the set physical transmission rate during the service interval (pg. 1, pp0005 lines 13-16) send their remaining fragments after all wireless station that transmit at the set transmission rate have completed transmission of their respective packets (pg. 5, pp0062, lines 1-5).



***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMONIYI A. OBAYANJU whose telephone number is (571)270-5885. The examiner can normally be reached on Mon - Fri, 7:30 - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent P. Harper can be reached on 571-272-7605. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/O. A. O./  
Examiner, Art Unit 2617

/VINCENT P. HARPER/  
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